NOTES

1. Papers selected for inclusion in General Sessions will be available at the Conference in the following official languages of the United Nations: English, French, Russian and Spanish.

2. Papers selected for inclusion in Specialized Sessions will be available at the Conference in only one of the above official languages.

3. Summaries of all papers, as submitted by contributors, will be available at the Conference in the following official languages of the United Nations: English, French, Russian and Spanish.

4. Papers and summaries will not be available for general distribution in advance of the Conference. They will be published in advance in limited quantities only for the use of delegations of participating governments and of other authorized participants. Post-Conference publication and general distribution of the Conference Proceedings will follow United Nations practices as laid down by the United Nations Publications Board.

GOVERNMENT AS A DYNAMIC AGENT IN MINERAL RESOURCE DEVELOPMENT

John M. Kelly, Assistant Secretary - Mineral Resources
United States Department of the Interior
Washington, D. C.

Introduction

1. For many nations the unlocking of mineral resources represents a major opportunity to stimulate progress for their peoples through the creation of economic wealth. The utilization of a nation's mineral resources can be a determinant of social and industrial progress. The income so derived can make a substantive contribution to material progress and can provide additional means for advancement of the technical skills of the people. Unused, mineral resources contribute nothing to a nation's welfare. Under any political philosophy, government initiative is integral to the maximum utilization of mineral resources in the national interest.

2. Government plays many roles in mineral resource development: Surveyor, scientist, landlord, proprietor, revenue collector, economic regulator, planner, protector of the public welfare, educator, negotiator in international affairs. In these activities the government has a dual responsibility to establish and maintain a stable course for its nation while, at the same time, assuring its responsiveness to changing fundamental conditions. The extent to which government dynamically creates a healthy environment for a minerals industry measures the degree to which indigenous minerals may assist in improving the national standard of living.

3. To raise a nation's standard of living through creation of wealth from mineral resources requires technical and professional competence and investment capital. Most important, government must stimulate and encourage mineral resource development. While minerals are a foundation for modern industry, agriculture, and urban life, it may be noted that some nations have a high degree of economic activity and high living standards with few, if any, mines or oil fields.

4. In a less developed nation the government's part in resource programs is peculiarly important because the usually limited number of persons with managerial and technical talent tend to concentrate in the government, which is the locus of power. Thus the creation of national resource development programs clearly is based upon the wisdom and energy of government. The success any less developed nation attains in creating a prosperous economy based on mineral wealth depends largely upon the intelligent planning and effective implementation of that nation's leadership.

5. To assist such countries in unlocking their natural resources is a challenge to the industrialized nations--a challenge which my Government is doing much to meet. The Department of the Interior, as the prime resource development agency within the United States Government, is pleased to share in this effort.

Exploration and Assessment

6. It is vital for newly created or less developed nations to assess as soon as possible what mineral resources may be available. An initial step in this regard, for which there is much precedent, is the establishment of a state organization

designed to foster and encourage minerals investigations. Such a national service presupposes the availability of scientific specialists and technicians sufficient in number to staff an efficient, even if limited, research agency charged with responsibility for reconnaissance and assessment of the national minerals potential.

7. The United States and many other nations have benefited from establishment of such minerals research agencies. Geological surveys and mining bureaus function effectively in India, Mexico, Canada, Peru, Chile, Japan, Australia, much of Europe, and elsewhere. Since World War II an outstanding contribution has been made in the Philippines where a small but effective mining bureau has been of great assistance. Such service agencies, staffed with competent personnel, have more than paid their way. Even an extensive assessment of mineral resources is only a beginning. It cannot be an absolute inventory, for despite improvements in geological techniques and instrumentation, we can only make educated guesses as to what lies beneath the ground. It is the role of such an agency to constantly improve its estimates of the minerals potential.

8. In many cases, development of mineral deposits and ancillary facilities requires large capital investment. In fact, foreign investment contributed much to the early development of the mineral industry of the United States. Many governments turn to foreign financing in such cases. Peru's Marcona iron deposit was known for years, but the Nation did not benefit from it until foreign financing, encouraged by the Peruvian Government, enabled its development on a large scale. Now the deposit provides a raw material for Peruvian blast furnances, foreign exchange through exports, and, possibly most important of all, training in industrial operations for Peruvian technicians, businessmen, civil servants, and engineers. Such a "creation" of mineral resources through application of capital, technology, and labor obviously benefits the Peruvian people in many ways.

Government's Direct Interest

9. As landlord or proprietor the state determines the development of state-owned resources. These resources may be developed by the state, by private domestic companies on license or concession, by private foreign entities on license or concession, by private companies in cooperation with the state, and possibly in other ways or combinations of effort. The state must provide a program and an incentive for any desired private development. Government also may provide that mineral resources shall be owned and developed by the finder. In most instances the development program should be designed to maintain maximum efficient employment and production, while permitting a reasonable return on invested capital.

Regulation and Revenue Collection

10. The primary long-term goal of national policies affecting mineral resources should be economic betterment of the citizens, and this must be kept constantly in view. Mineral resource development is of questionable value if it does not result in enhancement of living standards, encompassing the provision of adequate food, housing, communications, health facilities, education, and gainful occupation. The extent to which effective development takes place within a reasonable time may depend upon the laws and regulations under which the mineral industry operates. Although a seeking for political goals, without regard for economic gain, occasionally may intervene, all industry should pay its way and contribute through taxation and other means to the national welfare.

11. The government that encourages the accumulation of capital for research, development, and utilization of mineral commodities is taking an essential step in stimulating a sound domestic minerals industry. On the other hand,

government can defeat efforts toward mineral resource development through inequitable taxation, short-sighted tariffs, poorly devised mining laws, difficult legal requirements pertaining to labor and business structure, and a generally unsympathetic attitude.

Planning in the National Interest

12. No single formula applicable to all nations can be devised to encourage minerals development, and the actions any state takes will depend upon its own social, technological, and economic capabilities. Each state, however, can assure that planning of mineral resource development is coordinated with related energy, transportation, agriculture, and education programs, thus spreading costs over a wide base and extending social benefits to more people. It should be emphasized that mineral planning must be coordinated with import and export policies. Imposition of a high import tax on drilling or mining machinery, especially when such equipment is not manufactured within the nation, can inhibit mineral search and development. Export taxes on ores and concentrates should be gauged to economic levels compatible with world markets since many nations compete for trade and few have a product that is unique. Often it is impractical or impossible to process or fabricate mineral raw materials locally, and at times a mineral commodity initially cannot be used to maximum advantage in the producing country. It may be desirable to export such materials with the object of accumulating capital for subsequent industrial development when the nation's economic position warrants the installation of more complex fabricating or manufacturing units.

13. Government has a specific responsibility in resource development in the field of labor. Progress in industrialization requires real incentives to produce for the common welfare. For the individual worker, incentives must embrace opportunity --full opportunity to employ all his capabilities and to achieve recognition through advancement and promotion on the job, and full opportunity for better living for his family and children, including good housing, medical care and sanitation, and education. The worker must share and benefit from industrial effort. There should be recognition of this philosophy at the inception of a resource development program.

14. There is another point that must be emphasized. Throughout the world there is a staggering under-utilization of human skills and capacities. This serious defect must be corrected whenever possible if full advantage is to be taken of industrial development. There are untapped reservoirs of human ingenuity in emerging nations, hidden or dormant creative abilities striving for recognition and use. Basic training in the use of modern tools and equipment, coupled to educational programs designed to stimulate initiative and ingenuity on the part of the individual worker, is the essential method of unlocking these latent possibilities--government must recognize and encourage such endeavor.

15. Inherent hazards in mining can be greatly reduced through safety training, establishment and enforcement of safety codes, and alert supervision and inspection. Also needed is the protection of the health and safety of persons in the vicinity of mining and processing operations. In seeking solutions to such problems, the experience of the United States and many other nations may be helpful.

Technological Education

16. Minerals development requires skilled and educated personnel competent to undertake the unusually difficult and complex assignments inherent to minerals resource investigation and technology. Such personnel will be needed both in research and in production. Most nations, particularly the less developed nations, need outside technical and scientific assistance to some degree. In these days no nation is truly self-sufficient in scientific and technical talent. Establishment or expansion

of technical schools cannot be accomplished overnight, and this certainly is true where the domestic demand for such specialized skills may be limited to a relatively small annual increment of new specialists. Also, because of the need for mineral development concurrent with the strengthening of technical education, and because of the highly specialized nature of this education, it may be best that the schooling of a nation's own citizens in such professions as geology, mining, engineering, and metallurgy be undertaken outside the country. There are many ways that government can act as a dynamic force in expanding the number and improving the quality of technical and professional personnel. Among these in the United States are direct incentives such as grants and loans to students, and contracts, grants, or loans to institutions, and indirect incentives such as adjustments of the tax structure for mineral industries which support supplemental education for their employees.

17. Since resource research and management, be it in forestry, water, minerals, agriculture, or public health, involves extensive training at the post-graduate level, there may be substantial advantage in seeking a regional approach to these problems. Cooperative establishment of education and research centers available to more than one nation, with a faculty and facilities able to meet the requirements of the resource field, might be a satisfactory solution.

International Aspects

18. Governments today have the opportunity to seek assistance in resource development from international agencies and from several nations. The thoughtful and selective use of such assistance can and should provide some of the essential elements needed to initiate mineral resource utilization. A major component of such outside aid can be the provision of assistance in resource surveys and advice on regional development along with accelerated education and training. It must be recognized, however, that technologies from developed countries may not be readily transferable to the less developed countries-adaptive innovation on the part of both nationals and foreigners will be required.

19. Economic mineral deposits are not evenly distributed around the earth. This uneven distribution is a major factor in stimulation of world trade, making the various parts of our world inter-dependent, and this, after all, should be to everyone's advantage. Government has a major role in this situation, developing import and export policies that will encourage the exchange of surplus raw materials, and their processed or manufactured products, for those in short supply domestically.

The Impetus for Development

20. The impetus for mineral resource development in less developed nations may include a seeking for national prestige through industrialization. This prestige factor cannot be ignored, but it can be over weighted. An impressive industrial plant, by itself, cannot improve a nation's economic level and, in fact, may require an expenditure of money, manpower, and material far in excess of its capacity to produce economic benefits.

21. The establishment of a viable minerals industry may become a primary means of stimulating the growth of public utilities, such as transportation and power, and may result in large expansion in markets both for raw materials and fabricated products. But the dominant impetus for resource development should be the desire for a higher standard of living. A minerals industry can well contribute to this objective, providing full, creative opportunity for a nation's people. The extent to which these broad benefits of mineral resource development are realized depends, in large measure, on the implementation of dynamic, practical, and farseeing policies by the government.

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